LTE Band 4 _ Channel Bandwidth: 10 MHz_16QAM_50RB#0	
26 dB BW	**99% BW**
LCH	
	
MCH	
	
HCH	
	

LTE Band 4 _ Channel Bandwidth: 15 MHz_QPSK_75RB#0	
26 dB BW	**99% BW**
LCH	
	
MCH	
	
HCH	
	

LTE Band 4 _ Channel Bandwidth: 15 MHz_16QAM_75RB#0	
26 dB BW	**99% BW**
LCH	
	
MCH	
	
HCH	
	

LTE Band 4 _ Channel Bandwidth: 20 MHz_QPSK_100RB#0	
26 dB BW	**99% BW**
LCH	
	
MCH	
	
HCH	
	

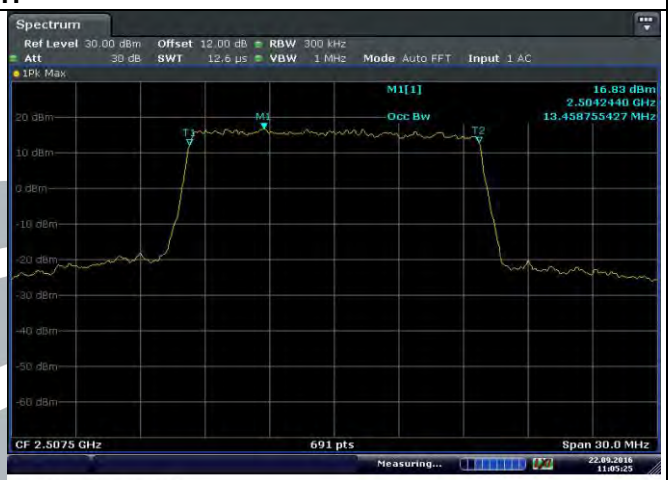
LTE Band 4 _ Channel Bandwidth: 20 MHz_16QAM_100RB#0	
26 dB BW	**99% BW**
LCH	
	
MCH	
	
HCH	
	

LTE Band 7 _ Channel Bandwidth: 5 MHz_QPSK_25RB#0	
26 dB BW	**99% BW**
LCH	
	
MCH	
	
HCH	
	

LTE Band 7 _ Channel Bandwidth: 5 MHz_16QAM_25RB#0	
26 dB BW	**99% BW**
LCH	
	
MCH	
	
HCH	
	

LTE Band 7 _ Channel Bandwidth: 10 MHz_QPSK_50RB#0	
26 dB BW	**99% BW**
LCH	
	
MCH	
	
HCH	
	

LTE Band 7 _ Channel Bandwidth: 10 MHz_16QAM_50RB#0	
26 dB BW	**99% BW**
LCH	
	
MCH	
	
HCH	
	

LTE Band 7 _ Channel Bandwidth: 15 MHz_QPSK_75RB#0	
26 dB BW	**99% BW**
LCH	
	
MCH	
	
HCH	
	

LTE Band 7 _ Channel Bandwidth: 15 MHz_16QAM_75RB#0	
26 dB BW	**99% BW**
LCH	
	
MCH	
	
HCH	
	

LTE Band 7 _ Channel Bandwidth: 20 MHz_QPSK_100RB#0	
26 dB BW	**99% BW**
LCH	
	
MCH	
	
HCH	
	

LTE Band 7 _ Channel Bandwidth: 20 MHz_16QAM_100RB#0	
26 dB BW	**99% BW**
LCH	
	
MCH	
	
HCH	
	

LTE Band 41 _ Channel Bandwidth: 5 MHz_QPSK_25RB#0	
26 dB BW	**99% BW**
LCH	
	
MCH	
	
HCH	
	

LTE Band 41 _ Channel Bandwidth: 5 MHz_16QAM_25RB#0	
26 dB BW	**99% BW**
LCH	
	
MCH	
	
HCH	
	

LTE Band 41 _ Channel Bandwidth: 10 MHz_QPSK_50RB#0	
26 dB BW	**99% BW**
LCH	
	
MCH	
	
HCH	
	

LTE Band 41 _ Channel Bandwidth: 10 MHz_16QAM_50RB#0	
26 dB BW	**99% BW**
LCH	
	
MCH	
	
HCH	
	

LTE Band 41 _ Channel Bandwidth: 15 MHz_QPSK_75RB#0	
26 dB BW	**99% BW**
LCH	
	
MCH	
	
HCH	
	

LTE Band 41 _ Channel Bandwidth: 15 MHz_16QAM_75RB#0	
26 dB BW	**99% BW**
LCH	
	
MCH	
	
HCH	
	

LTE Band 41 _ Channel Bandwidth: 20 MHz_QPSK_100RB#0	
26 dB BW	**99% BW**
LCH	
	
MCH	
	
HCH	
	

LTE Band 41 _ Channel Bandwidth: 20 MHz_16QAM_100RB#0	
26 dB BW	**99% BW**
LCH	
	
MCH	
	
HCH	
	

5.5 Band Edge at antenna terminals

Test Requirement: Part 27.53(h)/(l)/(m)

Test Method: ANSI/TIA/EIA-603-D 2010 & KDB 971168 D01v02r02

Limit:

Part 27.53(h)(1): Except as otherwise specified below, for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 log10 (P) dB. The emission limit equal to –13 dBm.

Part 27.53(m)(4): For mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

Test Procedure:

LTE_Band 4:

The transmitter output was connected to a calibrated coaxial cable and coupler, the other end of which was connected to a spectrum analyzer.

For each band edge measurement:

1) Set the spectrum analyzer span to include the block edge frequency.
2) Set a marker to point the corresponding band edge frequency in each test case.
3) Set display line at -13 dBm
4) Set resolution bandwidth to at least 1% of emission bandwidth.

Such as:

a) The center frequency of spectrum is the band edge frequency and span is 1 MHz. RB of the spectrum is 3 kHz and VB of the spectrum is 10 kHz (GSM/GPRS/EDGE).
b) The center frequency of spectrum is the band edge frequency and span is 5 MHz. RB of the spectrum is100 kHz and VB of the spectrum is 300 kHz (WCDMA).
c) The center frequency of spectrum is the band edge frequency and span is 2 MHz. RB of the spectrum is 20 kHz and VB of the spectrum is 20 kHz (LTE Bandwidth 1.4 MHz).
d) The center frequency of spectrum is the band edge frequency and span is 2 MHz. RB of the spectrum is 30 kHz and VB of the spectrum is 30 kHz (LTE Bandwidth 3 MHz).
e) The center frequency of spectrum is the band edge frequency and span is 2 MHz. RB of the spectrum is 51 kHz and VB of the spectrum is 51 kHz (LTE Bandwidth 5 MHz)
f) The center frequency of spectrum is the band edge frequency and span is 2 MHz. RB of the spectrum is 100 kHz and VB of the spectrum is 100 kHz (LTE Bandwidth 10 MHz)

5) Record the max trace plot into the test report

LTE_ Band 7&41:

Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the

emission bandwidth of the fundamental emission of the transmitter may be employed; for mobile digital stations, in the 1 megahertz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least two percent may be employed, except when the 1 megahertz band is 2495-2496 MHz, in which case a resolution bandwidth of at least one percent may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 1 megahertz or 1 percent of emission bandwidth, as specified; or 1 megahertz or 2 percent for mobile digital stations, except in the band 2495-2496 MHz). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power. With respect to television operations, measurements must be made of the separate visual and aural operating powers at sufficiently frequent intervals to ensure compliance with the rules.

Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

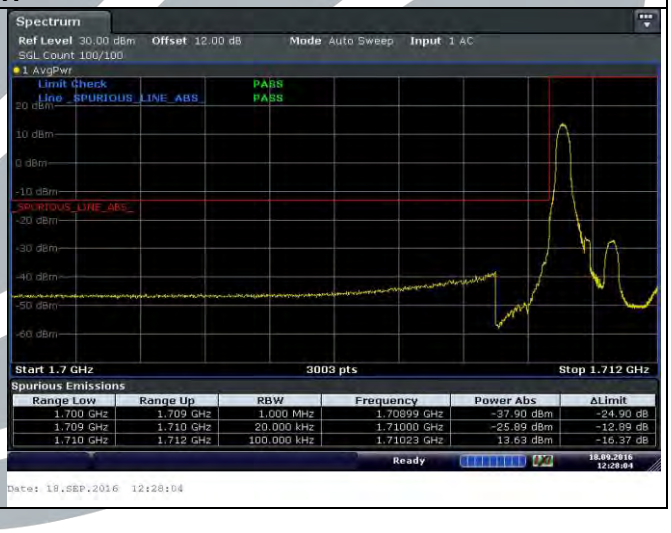
Test Setup: Refer to section 4.1.1(2) for details.

Instruments Used: Refer to section 3 for details

Test Mode: Link mode

Test Results: Pass

The test plot as follows:

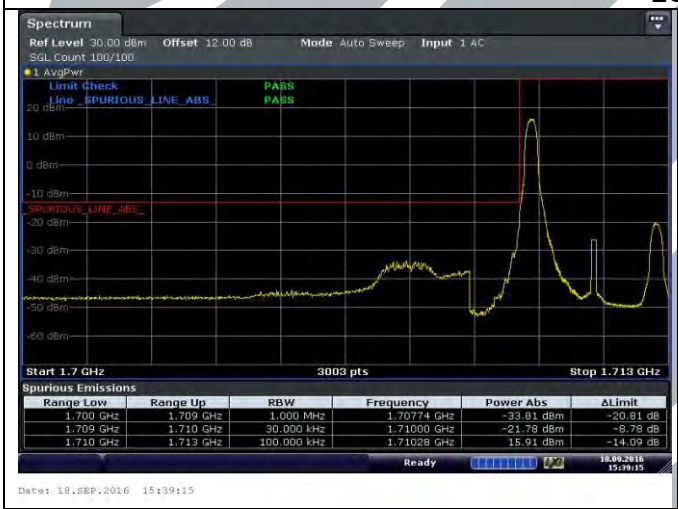
LTE_ Band 4_Channel Bandwidth: 1.4 MHz_1RB#0	
QPSK	**16QAM**
LCH	
	

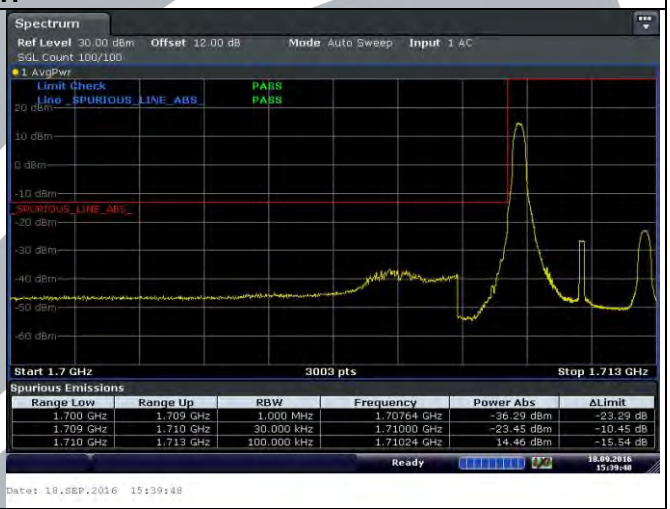
HCH

LTE_ Band 4_Channel Bandwidth: 3 MHz_1RB#0

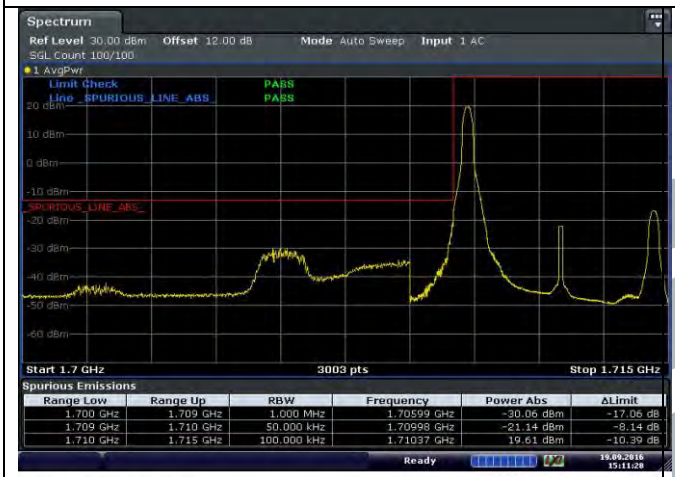
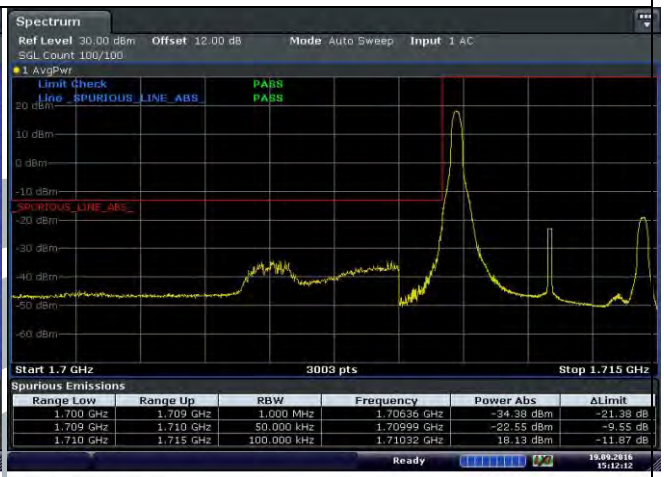
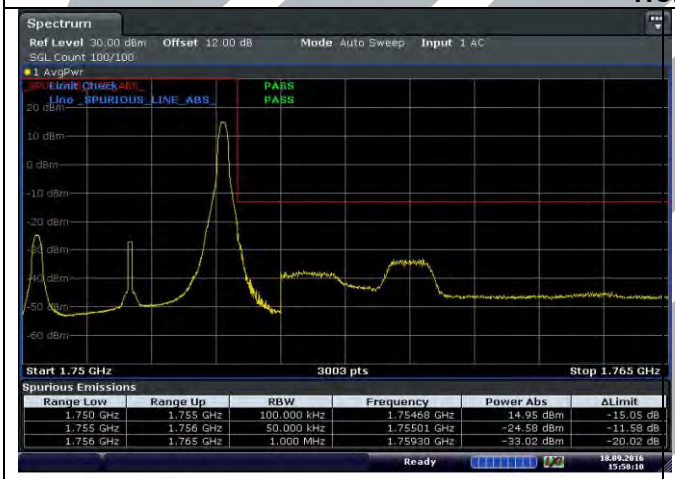
QPSK	16QAM

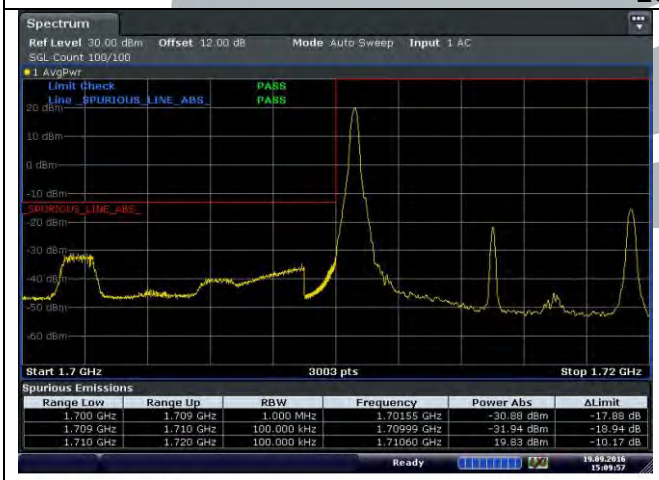
LCH



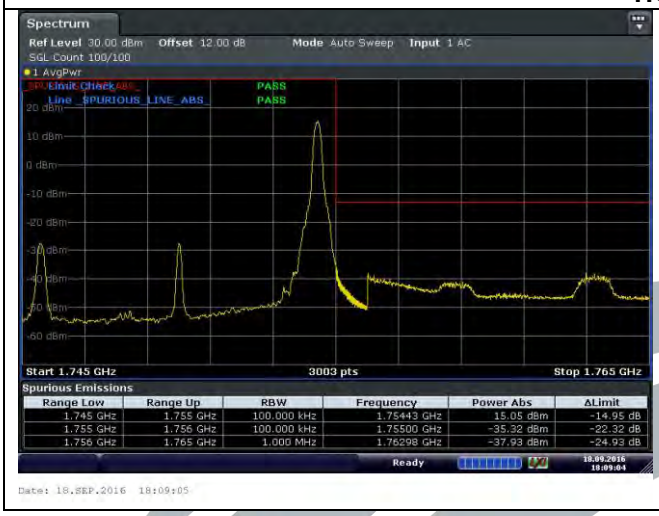


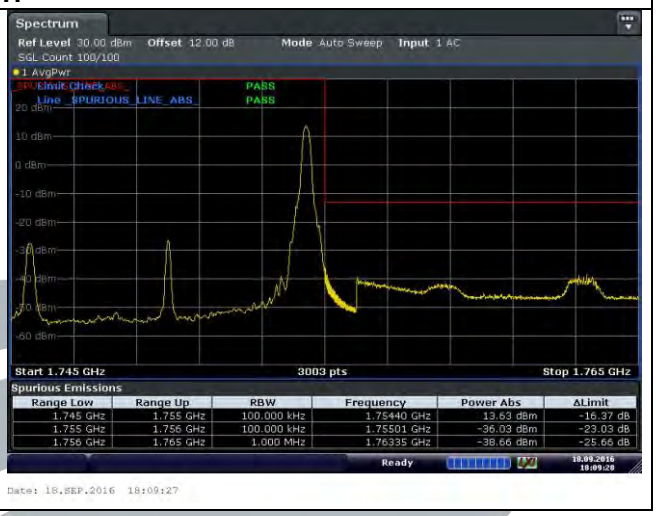
HCH

LTE_ Band 4_Channel Bandwidth: 5 MHz_1RB#0	
QPSK	**16QAM**
LCH	
	
HCH	
	

LTE_ Band 4_Channel Bandwidth: 10 MHz_1RB#0	
QPSK	**16QAM**
LCH	
	

HCH

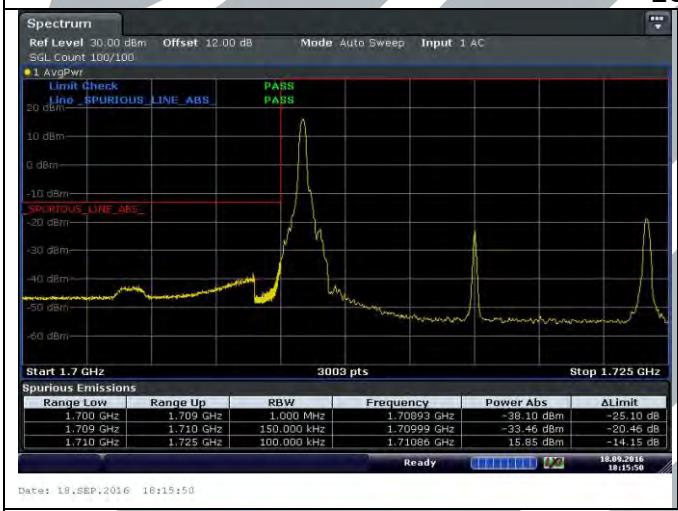


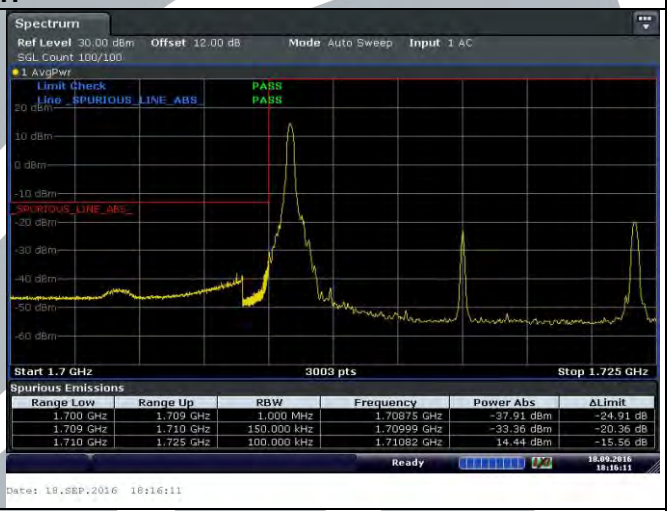


LTE_ Band 4_Channel Bandwidth: 15 MHz_1RB#0

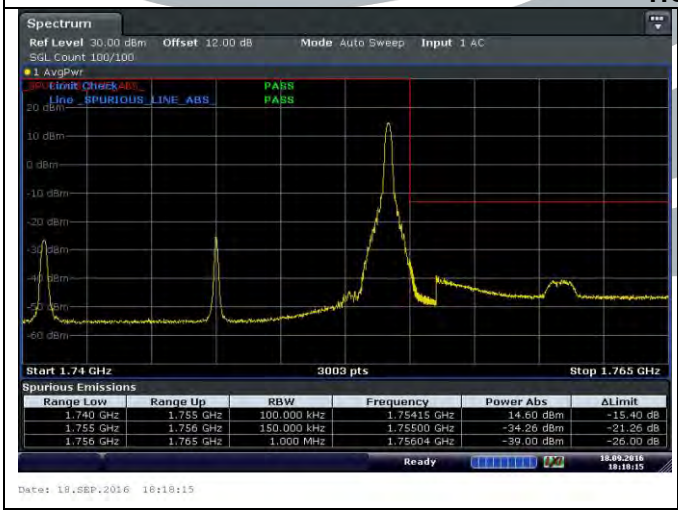
QPSK	16QAM

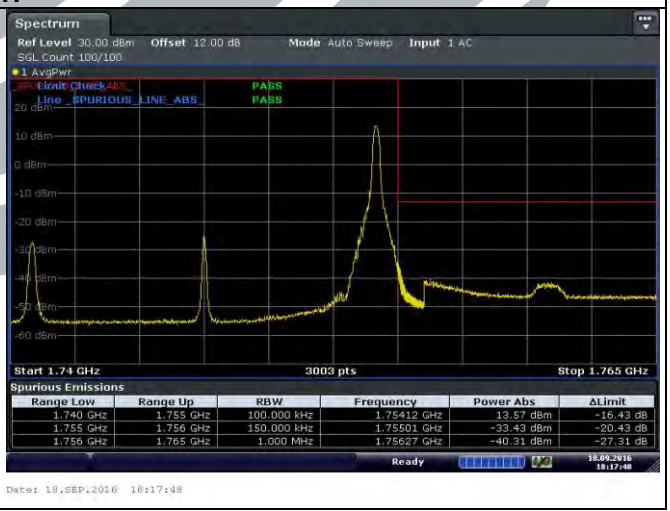
LCH





HCH





LTE_ Band 4_Channel Bandwidth: 20 MHz_1RB#0	
QPSK	**16QAM**
LCH	
	
HCH	
	

LTE_ Band 4_Channel Bandwidth: 1.4 MHz_6RB#0	
QPSK	**16QAM**
LCH